

CLAIM AMENDMENTS

1 1. (currently amended) A method for controlling the
2 position of a mandrel {10} that is mounted in a hydraulic extrusion
3 apparatus comprising a cylinder and a piston that form a piercing
4 cylinder {8}, of an extrusion press for producing pipes {2} that
5 are extruded from billets {4} that are loaded into a holder {5}
6 mounted upstream from the extrusion die {3} and pierced by means of
7 the mandrel {10}, ~~characterized in that~~ wherein the piercing
8 cylinder {8} is directly driven by pumps {11} that are adjusted to
9 a defined pumping volume as a function of the extrusion speed and
10 that a further pumping volume is added to the previously computed
11 pump conveying volume, a control valve {16} acting upon the front
12 ring compartment {12} of the piercing cylinder {8} being connected
13 to a sump tank {17} for the purpose of controlling the position of
14 the mandrel {10}.

1 2. (currently amended) The method according to claim 1,
2 ~~characterized in that~~ wherein the outlet pressure of the piercing
3 cylinder {8} is adjusted to a defined pressure.

1 3. (currently amended) The method according to claim 1
2 [[or 2]], ~~characterized in that~~ wherein the pressure levels in both
3 sides of the piercing cylinder {8} are monitored.

1 4. (new) A method of operating a tube-extrusion press
2 having
3 a die having a cavity;
4 a holder for pressing a billet forward through the die;
5 a mandrel shiftable forward and backward and having a
6 front end positionable in the die, whereby the billet pressed into
7 the die around the mandrel is deformed into a tube;
8 a hydraulic cylinder having a piston connected to the
9 mandrel and shiftable therewith, the cylinder defining a front ring
10 compartment between the piston and the die and a rear compartment;
11 a pump for supplying pressure to the cylinder; and
12 a tank connectable to the cylinder,
13 the method comprising the steps of:
14 operating the pump such that it supplies a pressure in
15 excess of what is needed to prevent forward movement of the mandrel
16 into the die during extrusion; and
17 bleeding pressure from the front compartment through a
18 control valve to a tank to control the position of the mandrel
19 relative to the die.

1 5. (new) The method defined in claim 4, further
2 comprising the step of
3 maintaining the outlet pressure of the cylinder at a
4 fixed pressure.

1 6. (new) The method defined in claim 4, further
2 comprising the steps of:
3 monitoring the pressures in the front and rear
4 compartments and controlling the pump in accordance therewith.